CANADA'S NEW *2030 EMISSIONS REDUCTION PLAN*: AN UNFORGIVABLE DECEPTION

David Gooderham and Jennifer Nathan
May 10, 2022

On March 29, 2022, the Federal Government released its most recent climate policy statement called the *2030 Emissions Reduction Plan* (ERP).[1] Most of the 233-page document lays out details of promised policies that the government says will reduce Canada's total domestic emissions 40% by 2030, down to an estimated 443 million tonnes (Mt), which the report calls our "notional pathway to 2030". Our domestic emissions reached 738 Mt in 2019.[2] The details of this plan make clear that any chance we have of meeting the 40% reduction goal will require extraordinary efforts to achieve deep emissions reductions in virtually every sector of the Canadian economy.

Yet, set sharply against this picture of promised deep emissions reductions within Canada over the next nine years, this same plan incorporates a detailed plan by our government to continue *increasing* Canada's oil production to 2030 and maintain high production levels for another 20 years after that. The plan envisions no significant reduction in Canada's oil production levels before 2050.

Canada's new climate plan enshrines continued expansion of Canada's oil production

The newly released *Emissions Reduction Plan* includes a list of the "assumptions" that it says will shape the growth path of Canada's economy to 2030 and which, in the absence of strong new policies, will continue to drive our emissions upward. These include the ongoing growth of Canada's population, the size of our GDP and expected rate of economic growth to 2030. The list includes, for example, the growing size of our population of driving age, which will increase the number of vehicles on the road. These are all part of the unavoidable challenges we face.

But the ERP, in its discussion about the "assumptions" that will shape the growth path of Canada's economy to 2030, also includes detailed information about the expected growth of Canada's oil production to 2030. Table 6.2 at page 213 presents data showing a 22% increase in our oil sands and conventional oil production over the next nine years, rising from 4.4 million barrels per day (bpd) in 2019 to 5.5 million by 2030. The data is taken directly from the *Canada's Energy Future 2021* report, published by the Canada Energy Regulator (CER) on December 9, 2021.[3]

At a press conference on April 4, 2022, Canada's Minister of Environment Steven Guilbeault confirmed that Canada's new climate plan is "based on" increasing oil production:

> *… the plan we presented last week, the Emissions Reduction Plan, was based on the Canadian Energy Regulator projections that oil and gas production would increase in Canada between now and 2030 …*

Built right into the ERP is this presumption, and acceptance, that our oil production will continue to increase to 2030 and beyond.

The role of the Canada Energy Regulator (CER)

The ERP document portrays the CER as playing an important and responsible role in advising government and industry to ensure that Canada's oil and gas production is safely developed in a way that is consistent with meeting the 1.5°C goal. The ERP (in a box on page 213) declares:

> *… a key objective of the 2015 Paris Agreement is to hold the increase in global average surface temperature to well below 2 degrees Celsius while pursuing efforts to limit the increase to 1.5 degrees above pre-industrial levels.*

It goes on to say that Canada has adopted a goal of "net-zero emissions by 2050", and continues:

> *The Canada Energy Regulator's Canada Energy Future reports provide a framework for businesses to make investment decisions in the energy sector. Its projections are important for ensuring Canadian businesses are making investments consistent with a transition to cleaner energy sources.*
>
> — 2030 Emissions Reduction Plan, Environment Canada, p. 213

The above statement is clearly intended to convey to ordinary Canadians that the CER's projections of Canada's future oil production levels are aligned with meeting the promised 1.5°C goal, or at least that the production plan has been designed with that goal in mind.

But the statement is false. Here are the most recent oil production projections published on December 9, 2021, by the CER:

Figure A: Future oil production – conventional oil and oil sands, millions of barrels per day (bpd)

	2019	2030	2040	2050
Current Policies Scenario	4.4	5.4	5.7	5.5
Evolving Policies Scenario	4.4	5.0	4.6	4.0

Source: *Canada's Energy Future 2021*, Canada Energy Regulator, December 9, 2021.

The CER 2021 report explains that its "Current Policies Scenario" assumes "energy and climate policies that are currently in place" around the world remain unchanged. In other words, it represents a continuation of the high-level dependence of the global energy system on fossil fuels to 2050, and projects Canada's oil production will continue to grow to 2040. In contrast, the

CER's new "Evolving Policies Scenario" assumes the world will adopt "steadily more ambitious climate policies" and is based on slightly lower levels of oil demand. But even the Evolving Scenario shows Canada's oil output continues rising until 2032, when it is projected to peak.

Key acronyms in this essay

ERP – Emissions Reduction Plan

CER – Canada Energy Regulator

IEA – International Energy Agency

CCUS – Carbon Capture, Utilization, and Storage

NDCs – Nationally Determined Contributions

gooderhamnathan.com/acronyms

In its previous annual report[4], published on November 24, 2020, the CER admitted that its "Evolving Scenario", which projected continued expansion of Canada's oil production up to 2039 and then a very slight decline to 2050, did not reflect the magnitude of the cuts in production levels that would be required to meet Canada's net-zero by 2050 goal (the transition would have to be "*faster than is shown in the Evolving Scenario"* the CER acknowledged). The CER has in fact never produced a "framework" for the oil industry that shows what the safe, lower levels of oil production might look like.

Again, in its most recent *Canada's Energy Future 2021* report, in a single brief sentence on page 19 the CER admits that its own new "Evolving Policies Scenario" does not put us on a pathway to meet the Paris goals, whether 1.5°C or 2°C:

> *In the Evolving Policies Scenario, significant GHG emissions reductions will be realized, but ambitious goals such as net-zero by 2050 are unlikely to be met.*

The ERP does not mention that the CER has consistently, over many years, failed to examine whether Canada's planned oil production increases are aligned with a 1.5°C world. Instead, the ERP document merely tells Canadians that the Minister of Natural Resources has very recently sent a letter[5] to the CER asking that it conduct a new scenario analysis:

> *On December 16, 2021 Natural Resources Minister Jonathan Wilkinson, wrote to the Chairperson of the CER's Board of Directors Cassie Doyle, to request that the CER produce fully modelled net-zero scenarios consistent with 1.5 degrees of warming under the Paris Agreement. The 1.5 -aligned Scenario Analyses will include fully modelled scenarios of supply and demand of all energy commodities in Canada, including clean fuels, electricity, and oil and gas. This modelling will also include the future trends in low-carbon technology and energy markets, to provide Canadians with information they need to better understand the future energy transition.*
>
> — *Emissions Reduction Plan*, March 29, 2022

But the "modelling" has not been done. It is not yet available. The promised 1.5°C-aligned analysis will not be publicly available until late in 2022 or early 2023.

In the meantime, our government is justifying decisions to expand our oil production (decisions that involve projects and infrastructure that will have an operating lifetime of 20 or 30 years) based on CER projections which are clearly not aligned with 1.5°C. The ERP document

acknowledges that our government and industry are currently using the CER's most recent projections as a "framework" to approve projects and "*to make investment decisions."*

By 2023, Canada's oil production will have increased by another 350,000 bpd above the 2021 level – and by 2024 it will be 530,00 bpd higher. That represents a 10% rise in our oil production within the next two years. And even when the CER's analysis is eventually released, we have no assurance that it will give us a reliable answer. The CER's is not an independent inquiry process. It is entirely closed to public access.

The ERP document is also misleading because it only reproduces details of Canada's planned rising oil production growth up to 2030. It excludes the long-term portion of the CER's projections, which forecast continuing high levels of production to 2040 and 2050 (see the details in Figure A above). The omission of the post-2030 oil production data from Table 6.2 of the ERP effectively deletes from the document any truthful picture of the scale of the current plan by our government and the oil industry to continue high levels of oil production for another 30 years. The CER's projected very high production levels to 2050, which provide the basis for decision making now by government and industry, are not disclosed in the Trudeau Government's new *Emissions Reduction Plan*.

For example, under the CER's most recent Current Policies Scenario, Canada's projected oil production by 2040 is about 30% above our production level in 2019. In comparison, the International Energy Agency's (IEA) "Net-Zero Scenario", which is aligned with meeting the 1.5°C goal, would require that global oil consumption decline to 44 million bpd by 2040, which is a massive 50% reduction below the 2019 level. We discuss the significance of the IEA's scenario in more detail below.

Canada's current planning and approvals of new projects that will drive increased oil production to 2040 and beyond is based on projections by the CER that are not remotely aligned with meeting the 1.5°C goal.

The ERP omits any mention of the International Energy Agency's modelling to 2030 and 2040

The International Energy Agency's Net-Zero Scenario[6], published May 18, 2021, is the leading international study that has examined the magnitude of the reductions in oil production that will be required on a global scale to avoid a catastrophic climate outcome. The most important contribution of the IEA study was its candid warning about the *immediacy* of the need to halt any further expansions of oil production, and its detailed conclusions about the rapid pace and severity of the deep cuts in oil use needed by 2030 and by 2040 to give the world *even a 50-50 chance* to keep the heating of the earth to within the 1.5°C threshold. Most significantly, it determined that within this decade a 25% reduction in global oil production would be required, down to 72 million bpd by 2030, and that a 50% cut to 44 million bpd must be achieved by 2040.

The top line in Figure B shows the decline in global oil consumption that will be required to be consistent with limiting the global temperature increase to 1.5°C (with a 50% probability of meeting that goal), based on the IEA's "Net-Zero by 2050 Scenario":

Figure B: IEA Net-Zero by 2050 Scenario: projections (in millions bpd)

	2019	2020	2030	2040	2050
Net-Zero by 2050 Scenario			72	44	24
Stated Policies Scenario	97.9	91.3	103.0	103.0	103.0

Sources: ***Net-Zero by 2050: A Roadmap for the Global Energy Sector*****, IEA, May 18, 2021; World Energy Outlook 2021, October 12, 2021, Figure 5.3, p. 214.**

As shown in Figure B, world oil production reached 98 million bpd, the highest level ever, in 2019. As a result of the severe economic impact of the Covid-19 pandemic, oil consumption dropped to 91.3 million bpd in 2020. The Stated Policies Scenario ("STEPS") shows the projected path of global oil production over the next 30 years based on the assumption that the world economy remains overwhelming dependent on fossil fuels and continues to rely on oil as the principal energy source for transportation. The STEPS scenario counts the benefit of all promised new carbon-reduction measures that have already been announced by governments and *assumes* that all those promised future measures will be fully implemented. It reflects the pathway we are presently following. Under the STEPS Scenario, global oil demand will move back up to 98 million bpd by 2023 and rise to 103 million bpd by 2030 or soon after and flatline at that level to 2050. The STEPS Scenario is aligned to warming of about 2.6°C.

In sharp contrast to that, the IEA's Net-Zero by 2050 Scenario shows that global production must decline to 24 million bpd by 2050 to align with 1.5°C. Furthermore, to meet that goal, 70% of the remaining 24 million bpd of oil production by 2050 will have to be used in applications where *the fuel is not combusted and so does not result in any direct CO_2 emissions* (i.e., used to produce chemical feedstocks, lubricants, and asphalt). By 2050, oil must have very limited use as a transportation fuel except for aviation.

Canada's new *Emissions Reduction Plan* document completely omits any mention of this warning given by the IEA about the early need for deep cuts by 2030 and 2040. Here is how our government describes the IEA's findings:

> *The International Energy Agency forecasts that to limit warming to less than 1.5 degrees C, global oil production will have to decline from 100 million barrels per day in 2020 to 24 million barrels by 2050. To remain competitive in a tighter future market, Canadian production will have to reduce its carbon intensity while the sector explores opportunities to transition to non-emitting products and services.*
>
> — *2030 Emissions Reduction Plan*, p. 48 (emphasis added)

As we can see, Canada's ERP refers to the cut in oil consumption required by 2050. But nowhere in this lengthy report prepared by our Ministry of Environment is there any mention of the need for deep cuts by 2030 and 2040. A further reference to the IEA's Net-Zero Scenario is found in the introductory section to the ERP document, offering only a generic description of the study:

> *The International Energy Agency's Net-Zero Scenario sees continued oil and gas use globally, but with demand declining significantly in the coming decades.*

The missing information, if it had been included, would stand in direct contradiction to Canada's current plans to continue expanding its oil production. The Canada Energy Regulator's (CER) report published on December 9, 2021, promises 22% growth of Canada's oil production to 2030 and continuing high production levels to 2050. None of that can be squared with the IEA's data. Canada's ERP eliminates any reference to the IEA's urgent and detailed warning that very deep cuts in global oil use are required by 2030 and 2040.

During the past year, multiple other analyses published by international bodies and by climate scientists have confirmed in unqualified terms the IEA's warning and have focused on the importance of the 2030 deadline. The authoritative *Production Gap Report*[7] released October 20, 2021, concluded that "the world's governments plan to produce more than twice the amount of fossil fuels in 2030 than would be consistent with limiting warming to 1.5°C". In the case of oil production, it states:

> *Nations are, in aggregate, planning on producing around 40 million barrels per day (Mb/d) more oil than would be consistent with the median 1.5°C pathway in 2030 (with a range of 26-56 Mb/d). This excess is roughly equivalent to half of current global oil production.*
>
> — *Production Gap Report*, October 20, 2021, p. 15-16 (emphasis added)

In making that assessment, the *Production Gap* report examined oil production data for the world's 15 major producing countries, including Canada. In the case of Canada, it specifically cited and relied on the projected oil production increases published in the CER's *Canada Energy Outlook 2020* report released in November 2020.

In addition, leading Canadian scholars have also examined the global climate implications of the CER's projections and explained the risks.[8] The information is readily available. Crucial information has been deliberately excluded from the ERP document to mislead Canadians about the risks of continuing to expand our oil production. It is a shabby story.

Deceit and reckless indifference

On April 6, 2022, the Federal Government announced the approval[9] of a major new offshore oil field in Newfoundland which is expected to come into production by 2028. Known as Bay du Nord, it will contribute an additional 200,000 bpd to Canada's oil production level. The approval came just one week after the *Emissions Reduction Plan* was published.

The Bay du Nord decision does not come as a surprise. Four months earlier, as we have seen, the government's energy agency, the CER in its December 2021 *Canada's Energy Future* report confirmed under its Current Policies Scenario that Canada's oil production will continue growing to 2040, rising about 1.3 million bpd above the 2019 level. The new offshore project will provide a substantial share of that growth.

On April 4, 2022, two days before the Bay du Nord decision was announced, Environment Minister Steven Guilbeault was asked at a press conference how Canada can justify e*xpanding* production when recent studies by the International Energy Agency (IEA) and other international bodies have explained that an immediate halt to further oil production growth is required to give us a chance of keeping global heating from exceeding the 1.5℃ threshold. In his answer, the Minister referred to the government's new ERP:

> *So, the plan we presented last week, the Emissions Reduction Plan, was based on the Canadian Energy Regulator projections that oil and gas production would increase in Canada between now and 2030. Now, as many of you know, Minister Wilkinson, who is responsible for the Canada Energy Regulator, asked them for new scenarios in terms of production and demand for fossil fuels and different forms of energy that would be compliant with 1.5 scenarios. Now we don't have those scenarios from the CER so we had to use the last ones that were available which forecast an increase in production between now and 2030 and what our plan shows is how we get there, despite the increase in production …"*
>
> — Guilbeault, Press Conference, April 4, 2022 (emphasis added)

Guibeault misled the media, and deceived all Canadians, when he stated at his press conference on April 4, 2022, that he and the government "had to use" the CER's December 2021 oil projections. The Minister of Environment was fully aware that the CER's projections showing continued increases in Canada's oil production to 2032 are unreliable because they have never been tested against modelled net-zero scenarios consistent with 1.5℃ of warming. He admitted at his press conference "we don't have those scenarios from the CER".

In his capacity as Environment Minister, Guilbeault approved the decision to include the CER's December 2021 oil production data as an integral part of the new *Emissions Reduction Plan*. His own Ministry put the profoundly flawed production data into the plan on March 29, 2022. Six days later he told the media that he and his cabinet colleagues had no choice but to be guided by that data.

The truth is that nothing forced Steven Guilbeault to accept and adopt the CER's projections as a framework that bound him to approve the Bay du Nord offshore oil project, as he did on April 6. No law or necessity compelled the Minister to adopt the flawed CER projections as a mandatory "framework" to guide his decision-making.

At his press conference, after making his brief reference to promised new scenarios for fossil fuel production that would be "compliant with 1.5 scenarios", Guilbeault assured Canadians that "what our plan shows is *how we get there*". How we get where? The ERP document in fact does not show, or discuss at all, how Canada's growing oil production might be made compliant with the 1.5℃ goal. The ERP shows only how Canada's domestic emissions might be reduced to meet the 443 Mt target by 2030. It is silent about oil production levels and the 1.5℃ goal.

Jonathan Wilkinson, in his previous tenure as Minister of Environment (a position he held for two crucial years from October 2019 to October 26, 2021) inexplicably failed for two years to instruct his Ministry to develop scenarios that would inform the government and inform the

Canadian public with complete honesty and candour what production levels for Canada's oil production over the next 20 to 30 years can be safely aligned with an effective global effort to stay within the 1.5°C warming threshold. He could have done that after the IEA published its Net-Zero Scenario of May 18, 2021. Wilkinson could have acted two years ago, after the IEA released an earlier scenario in its annual *World Energy Outlook* report in November 2019. It warned in detail of the deep cuts in oil production required by 2030 and by 2040 to keep warming within the less stringent 1.8°C warming threshold.[10]

An honest and competent government would have acted immediately after the IPCC issued its *Special Report on Global Warming to 1.5°C* in October 2018, which warned governments unequivocally that to stay on a pathway to keep temperatures within the 1.5°C warming threshold, global emissions must be cut 50% by 2030.

On July 8, 2021, twenty-one energy economists and climate scientists, all deeply experienced and informed about Canada's oil production projections and the emissions implications of continued expansion, sent a letter to the Prime Minister.[11] It cited in detail the findings of the IEA's May 18, 2021 "Net-Zero by 2050 Scenario", and was copied to the Minister of Environment and Climate Change, and to the Minister of Natural Resources, and to the Chair and CEO of the Canada Energy Regulator. They wrote: "Specifically, we urge you to mandate that the Canadian Energy Regulator model scenarios consistent with the IEA's Net Zero by 2050 report*"*. In plain English, that meant the government should immediately direct or instruct the CER to develop scenarios that will identify the much lower and declining oil production levels in Canada over the next 20 to 30 years that would be safely aligned with an effective global effort to stay within the 1.5°C warming threshold. The Ministers did not act. Six months passed. Undeterred, the CER released its new oil projections, entirely ignoring the crucial question.

On December 14, 2021, just five days after the CER 2021 report was released, four of Canada's leading experts on climate policy and oil production published an article[12] containing a devastating indictment of the irresponsible and misleading character of the CER's new projections: *"Canada's energy regulator turns a blind eye to dangerous global warming*". They stated that the report has "failed to inform looming policy decisions*".* The authors pointed out that the CER's new "Current Policies" forecast for Canadian fossil fuel production (now enshrined in Canada's ERP) is roughly aligned with the IEA's recently published "Stated Policies Scenario" which, as the authors explain, "anticipates 2.6°C of warming, far beyond the Paris target".

The Ministers' decision to incorporate the CER's new oil projections into the ERP and use that data to justify continued expansion of Canada's oil production is a betrayal of the public interest. It sedulously protects and advances the interests of the oil industry, which aims to maintain high production levels for another 20 or 30 years. But the CER and the Ministers have closed their eyes to the public interest.

An independent inquiry required

It is wrong to leave an inquiry on a question of this gravity, which is so irrevocably consequential to our children, to the CER, which is an agency of the Federal Government and

unaccountable to the public. The Minister has assigned this task to an anonymous group of people, employees of the government and others who will be selected and contracted by the government to provide information and expert evidence. The Minister himself has framed the question.

Under this arrangement, there will be no hearings, no cross-examination, no public record of proceedings, and no media access. There will be no lawful avenue for a Canadian citizen to scrutinize the sources and evidence that is being considered by the CER, or legally challenge the evidence, the process, or the findings. The CER will quietly decide behind closed doors what evidence it will look at, and what lines of inquiry it will ignore.

The issue at stake, the future path of Canada's oil production to 2030, 2040, and 2050 is too deeply enmeshed in the conflicted economic and political interests of government and the oil industry to be left to a secretive process of bureaucrats, who are instructed by the Minister.

A proper examination of this crucial question must be done by an independent *public* inquiry process. That is our guarantee that the evidence will not be pre-selected or "cherry-picked". There must be an opportunity for Canadians to challenge and cross-examine the experts, and an opportunity to call other expert witnesses who may disagree with those who have been selected by the government. The process must be able to test and challenge the experience and skills of those who are selected as expert witnesses and scrutinize their affiliations and independence. The integrity of the process must also be protected by the basic principles of judicial independence, so we can be confident that the decision makers are not being influenced by pressures, discussions, or other sources of information that have not been tested in the hearing room, in public view.

The proposed "cap" on oil sands emissions will not slow the projected growth of Canada's oil production to 2030

On November 1, 2021, on the stage at the COP26 meeting in Glasgow speaking to an assembly of world leaders, Prime Minister Trudeau declared that Canada has "formally committed" to cap emissions from our country's oil and gas sector. The Canadian media reported that "A cap had been promised in the Liberal's recent election platform, with plans to force emissions down until they reach net-zero by 2050."

In making this announcement in Glasgow, Trudeau invoked the memory of Lytton, the British Columbia town burned to the ground on June 30, 2021[*], when wildfires swept through our province. "What happened in Lytton can and has and will happen anywhere," he told the assembled leaders. He added: "*How many more signs do we need? This is our time to step up.*"

[*] This event was of global significance. "Exceptional heatwaves affected western North America during June and July … causing hundreds of related deaths. Lytton, in south-central British Columbia, reached 49.6°C on June 29, breaking the previous Canadian national record by 4.6°C and was destroyed by fire the next day": World Meteorological Organization, *State of the Global Climate 2021*, October 31, 2021.

What Trudeau did not tell the assembled leaders is that Canada, the world's fourth largest oil producer and third largest oil exporter, intends to continue expanding its oil production.

Even before the Glasgow announcement, Government Ministers had made clear that the promised "cap" relates only to the volume of emissions released into the atmosphere from oil extraction and processing activities within Canada. At the end of October 2021, Wilkinson was replaced as Minister of Environment and Climate Change by Steven Guilbeault. Wilkinson became Minister of Natural Resources. On October 27, 2021, the day after his appointment as Environment Minister, Guilbeault was asked about the oil and gas sector. He responded: "We are not trying to cap production. We will be capping the amount of pollution that comes from those sectors."

The ERP document confirms that none of the government's proposed new policies, including plans to subsidize large-scale deployment of Carbon Capture, Utilization, and Storage (CCUS) technology in the oil sands industry, are intended to bring about any decline in the currently projected growth of Canada's oil production. Indeed, the text of the ERP affirms that the aim of government policy will be to continue to maximize production:

> *The government will work closely with the provinces and the sector to manage competitiveness challenges, remain attuned to evolving energy security and climate risk considerations, maximize opportunities for ongoing investment in the sector, and minimize the risk of carbon leakage. The intent of the cap is not to bring reductions in production that are not driven by declines in global demand. Mechanisms like the CCUS investment tax credit will help support decarbonization.*
>
> — *2030 Emissions Reduction Plan*, March 29, 2022, p.53 (emphasis added)

The government's plan is clear: Canada's oil production will only start to decline when – and if – other countries begin to consume less oil. In the meantime, Canada's production levels will be guided solely by "global demand".

Large-scale deployment of CCUS technology will not address our predicament

A strategy allowing Canada's oil production to grow unchecked, subject only to the constraint of how much foreign countries choose to buy, is not a climate policy. It is a non-policy, in the sense that it is a plan to deliberately do nothing to meaningfully alter the destructive path the world is presently on.

No amount of further technological improvements in the oil sands industry, not even large-scale adoption of CCUS at all oil sands production sites, will significantly lower the total amount of emissions that will be released into the atmosphere from oil sourced from Canada's oil sands. Our predicament is that over 85% of the life-cycle emissions occur *after the extraction process is completed*, after we export our oil, when it is burned as fuel in cars and trucks ("downstream emissions") and released into the atmosphere as tailpipe emissions. There is no existing technology that can "remove" those downstream emissions from the atmosphere once they are released. "Direct air removal" technologies do not exist.

The downstream emissions, which are about 6 times larger than the amount of the domestic emissions released within Canada during the extraction process (the upstream share for oil sands production was 83 Mt in 2019), do not get counted in our national emissions, and we do not include them in setting Canada's emissions reduction targets. Yet the scientific evidence is clear that cumulative global emissions are driving the warming of the atmosphere. That includes the substantial share of the downstream emissions attributed to our exported oil.

Life-cycle emissions for all types of oil produced around the world range from a low of about 450 kg CO_2 per barrel up to a high end of about 650 kg CO_2 per barrel. Total life-cycle emissions per barrel (also sometimes called "well-to-wheels emissions") comprise all emissions released during the entire production and consumption cycle of the product. Canadian oil sands are at the higher end of that range, above 550 kg CO_2 per barrel, including emissions from the production process in Alberta, refining the product (which mostly occurs in the U.S. after we export our raw bitumen), shipping and distribution, and final consumption as fuel.[13] Given that oil sands extraction emissions average 80 kg CO_2 per barrel[14] ("upstream emissions"), they account for less than 15% of the total life-cycle emissions released by each barrel we produce.

Total upstream emissions annually in the oil sands sub-sector in 2019 were 83 Mt. That is the share that is counted in Canada's national emissions. By 2030, rapid deployment of CCUS will only achieve emissions reductions in the order of 7 Mt to 15 Mt.[15] Even capturing as much as 15 Mt by 2030 (which would represent 18% of the upstream emissions from the oil sands production process in Alberta) would have only a minimal impact on the overall magnitude of the emissions released into the atmosphere by our exported oil.

At best, by 2030 very rapid and large-scale adoption of CCUS could reduce the overall emissions (life-cycle emissions per barrel) of our exported oil by 2 – 3%. But if our oil production continues to expand rapidly to 2030, as we are currently planning to do, there will be no benefit at all. Given that Canada's oil production is projected to increase 22% by 2030 above the 2019 level, the total volume of downstream emissions from our oil exports will continue to substantially increase. Any reductions to our upstream emissions achieved by CCUS will be more than offset by much higher downstream emissions.

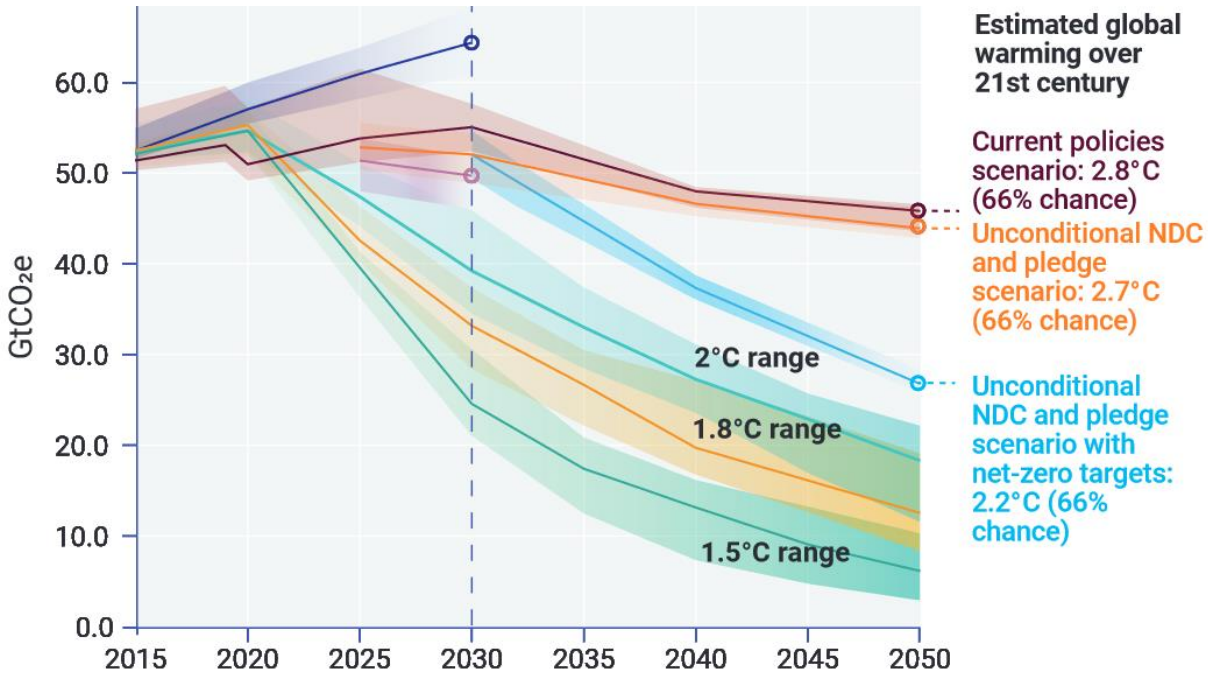
The unforgiving 2030 deadline

Canada's new *Emissions Reduction Plan* makes no reference at all to the global context of our climate predicament. Neither Minister of Environment Guilbeault nor Natural Resources Minister Wilkinson, in any of their recent public statements and press conferences, has made a single mention of the extreme gravity of the deadline we face in terms of the ongoing growth of global emissions.

The information is readily available. One of the leading sources is the *Emissions Gap Report* which is published annually by the UN. The *UN Emissions Gap Report 2021*, released on October 26, 2021, provides a comprehensive analysis of our situation.[16] Figure C, reproduced from that report, explains the scale of the deep and rapid emissions cuts required by 2030 to give us any realistic chance of keeping the earth's average surface temperature increase to 1.5°C, or 2°C.

In 2019 the annual level of global emissions reached 51.5 $GtCO_2eq$. They dropped significantly in 2020 due to the economic impact of COVID-19 (indicated by the sharp break in the black line marked "current policies scenario") but resumed their growth again in 2021. The term "Nationally Determined Contributions" (NDCs) refers to the commitments made by the signatories to the 2015 Paris Agreement to reduce their national emissions by 2030. But as the orange line on the graph shows, tragically, the combined NDCs promised by all countries up to October 2021 are not remotely close to providing the enormous emissions reductions needed by 2030. The discrepancy is the "emissions gap".

Figure C: Global greenhouse gas emissions under scenario and the emissions gap to 2030



Source: ***UN Emissions Gap Report 2021*****, October 2026, Figure ES.6, p. XXV**

Even with the full implementation of all NDCs promised by all countries by 2030 (including Canada's promised 40% reduction), global emissions are on track to reach 52 $GtCO_2eq$ by 2030. The annual level of global emissions will therefore be higher in 2030 than it was in 2019. That level of global emissions by 2030 will put us on a pathway to a temperature increase of 2.7°C above pre-industrial levels and is depicted by the orange line and the notation "unconditional NDC and pledge scenario: 2.7°C (66% chance)".

The above graph provides the context that explains why global oil production must sharply decline by 2030 and why it must decline even more deeply by 2040. Burning fossil fuels (coal, oil, and natural gas) accounts for about 70% of total global emissions every year. Oil alone accounts for about one-third of that amount. Coal use has been slowly declining (in most of the advanced industrial economies) but natural gas use is rising. The deep emissions cuts required by 2030 cannot be achieved if oil production continues to increase.

To stay on a pathway to limit the warming increase to 1.5°C requires that the annual level of global emissions be reduced to 25 $GtCO_2eq$ between now and 2030, which means cutting the current level of global emissions by 28 $GtCO_2eq$. That is the "emissions gap" to 1.5°C. It is equivalent to achieving a 50% reduction of all emissions world-wide within the next nine years.

To stay on a pathway to give us a realistic chance to keep temperature increase to less than 2°C, the annual level of global emissions must by 2030 be cut to an annual level of 39 $GtCO_2eq$, an emissions gap of 13 $GtCO_2eq$.

Closing the emissions gap will require an epochal change of course.

For this reason, 2030 is an unforgiving timeline.

All this information about the global emissions gap is excluded from our government's new *Emissions Reduction Plan*. The ERP promises to reduce Canada's domestic emissions 40% by 2030. But, as the above graph shows, even if that is done it still leaves us on a path to 2.7°C. The ERP does not mention any of that.

Canada has only published details showing the planned *increase* in Canada's oil production to 2030. It omits from the ERP the rest of the story. Canada provides about 5% of global oil supply. We are the world's 4th largest oil producer and 3rd largest exporter. Canada's plan, which contributes to the ongoing rise of global oil production, will materially diminish any realistic chance of closing the emissions gap by 2030. That is the rest of the story. The terrible risk and burden of catastrophic and irrevocable climate breakdown is being quietly shifted to the world's children, in exchange for our own immediate financial gain from expanding oil production.

The deception: closing our eyes to the world

We are often told by Ministers and energy economists that, under the Paris Agreement (and under the terms of the UN Framework Agreement on Climate Change that defines what emissions countries are obliged to count in their national emissions accounting) Canada has no legal responsibility to "count" our "downstream" emissions as part of our formal national emissions.

But the accounting rules are not an answer to the problem we face. Global emissions from burning fossil fuels are driving the warming of the atmosphere. That includes the massive volume of the downstream emissions released by our exported oil, which we are planning to increase for another 10 or 20 years. There is no existing technology that can "remove" them from the atmosphere once they are released. The fact that the Government of Canada does not "count" them does not halt the warming. The downstream emissions from our oil contribute directly to climate change in Canada – to the same extent as if those emissions were released in Saskatchewan or in Nova Scotia.

The Supreme Court of Canada in its decision on March 25, 2021, in the *Greenhouse Gas Pollution Pricing Act* case, relying on the scientific evidence presented to the Court, clearly and precisely acknowledges the *borderless* way emissions released in one jurisdiction will affect (and drive climate change) in all other jurisdictions. In the Carbon Pricing case, the Court was

required to examine the scientific evidence which explains why GHG emissions released within one province in Canada will impact all the other provinces:

> *"It is also an uncontested fact that the effects of climate change do not have a direct connection to the source of GHG emissions; every province's emissions contribute to climate change, the consequences of which will be borne extra-provincially across Canada and around the world"*
>
> — References re *Greenhouse Gas Pollution Pricing Act*, para 187 (emphasis added)

In the same way, whether they are released by cars and trucks in New York or Shanghai, emissions from our exported oil are contributing directly to climate breakdown in B.C. and Northern Quebec, and they are driving the escalating heat in India and all of South Asia, and the horrific drought in the Horn of Africa and across the Sahel, the retreat of glaciers in the Himalayas and Central Asia, acidification of the world's oceans. This catastrophic outcome, which crosses all national borders, is being driven by the physics of climate change. Nothing in the national emissions accounting rules will slow that down or protect us or the world from the consequences of the downstream emissions from our oil exports.

NOTES

1. March 29, *2030 Emissions Reduction Plan*, Environment Canada: https://www.canada.ca/content/dam/eccc/documents/pdf/climate-change/erp/Canada-2030-Emissions-Reduction-Plan-eng.pdf

2. National Inventory Report 1990 – 2020: Greenhouse Gas Sources and Sinks in Canada, Environment and Climate Change Canada, April 14, 2022: https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/sources-sinks-executive-summary-2022.html . This new report provides the most recent accounting of Canada's current domestic emissions. Canada's new emissions plan promises a 40% reduction of domestic emissions by 2030, below the 2005 level. Emissions in 2005 were 741 Mt. They reached 738 in 2019, which was a 0.5% reduction below the 2005 level over fourteen years. Meeting the 2030 target will require an absolute reduction of 295 Mt below the 2019 level. With the onset of the COVID pandemic, our emissions dropped to 672 Mt in 2020. That 8.9% decline reflected the collapse of economic activity, principally in the transportation sector. It is anticipated that emissions will be back close to the 2019 level by the end of 2022, as economic growth resumes.

3. *Canada's Energy Future 2021*, CER, December 9, 2021: https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2021/canada-energy-futures-2021.pdf

4. Canada's Energy Future 2020, November 24, 2020 (CER): https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2020/canada-energy-futures-2020.pdf

5. The Minister's December 16, 2021 letter to the CER instructed that it "undertake scenario analysis" relating to Canada's future oil production: https://www.cer-rec.gc.ca/en/about/news-room/whats-new/2021/canadas-energy-future-report-minister-letter-to-cer-16-december-2021.pdf. It outlines the scope of the inquiry in three sentences. Here are the first two:

   > *... I am requesting, as the Minister responsible for the CER, that your organization undertake scenario analysis consistent with Canada achieving net-zero emissions by 2050 as soon as possible. This includes fully modelled scenarios of supply and demand of all energy commodities in Canada, including clean fuels, electricity, and oil and gas.*

   That part, by itself, does not address the problem. A scenario "consistent with Canada achieving net-zero emissions by 2050" requires only that our domestic emissions be reduced to "zero" by that date, which in theory could be achieved by relying on CCUS technology, modular nuclear reactors, and other future technologies to "remove" all upstream emissions from our oil production operations. That *"net-zero emissions by 2050"* outcome in Canada would not require any reduction of our existing high levels of oil output. It would not be consistent with *the world* reaching net-zero by 2050. The first part of the letter therefore does not indicate any departure from Canada's existing policy which is to continue indefinitely our high levels of production. The third sentence of Wilkinson's letter raises the global dimension of the problem:

The modelling should reflect a global context in which the world achieves its Paris Accord goal of limiting warming to 1.5 degrees C, and should consider relevant uncertainties, including future trends in low-carbon technology and energy markets.

The third sentence does appear to direct that the CER should examine the future decline in global oil consumption that will be essential to meet the global goal of limiting warming to 1.5°C, and the timeline for those required reductions (which will show that deep reductions in oil production are essential as early as 2030 and 2040) But the Minister's proviso that the study should consider "energy markets" and "future trends in low-carbon technology" introduces important qualifications about the scope of the inquiry. It gives the CER enormous discretion to arbitrarily shape the results of their study to justify why Canada's production can remain at higher levels.

Most significantly, instructions to consider "future trends in low-carbon technology" opens up the issue – a deeply conflicted question – about the possibility that envisioned future "negative emissions technologies" will allow the world to effectively *remove* CO_2 from the atmosphere on a sufficiently vast scale to permit and justify much higher levels of oil, coal, and natural gas use for many more decades, or at least delay immediate action to rapidly curb their use.

The CER, in its previous *Canada's Energy Future 2020* report published November 24, 2020, strongly promoted that view. It extolled the promise of future "*emissions removal"* technologies and asserted, without any detail or evidence, that *"residual emissions can be balanced by enhanced biological sinks and negative emissions technologies"* (page 67). Direct air removal technologies do not yet exist or exist only in experimental forms that may never prove viable or scalable. The CER has no special expertise on those far-reaching and speculative matters.

The Minister's instructions to the CER on December 16, 2021, are vague. They appear, however, to invite the CER to conclude that global oil demand is likely to remain high for another several decades (which is the view of the oil industry and its proponents) and that future development of negative emissions technologies, including "direct air removal", will allow the world to eventually "remove" the resulting higher levels of CO_2 from the atmosphere and achieve "net-zero emissions" by 2050. That is the approach the CER laid out in its November 24, 2020 report, although at that time it offered no detailed analysis or evidence .

6. *Net-Zero by 2050: A Roadmap for the Global Energy Sector*, International Energy Agency (IEA), May 18, 2021: https://iea.blob.core.windows.net/assets/4719e321-6d3d-41a2-bd6b-461ad2f850a8/NetZeroby2050-ARoadmapfortheGlobalEnergySector.pdf.

   In its *World Energy Outlook 2021* report released October 12, 2021, the IEA provides a further comprehensive analysis of the massive scale of the transition that will be required in all sectors of the world economy (transportation, electricity generation, industry, etc.) which at present relies on coal, oil, and natural gas to supply 80% of our primary energy: https://iea.blob.core.windows.net/assets/4ed140c1-c3f3-4fd9-acae-789a4e14a23c/WorldEnergyOutlook2021.pdf

7. SEI, IISD, ODI, E3G and UNEP. (2021) *The Production Gap Report 2021*. https://productiongap.org/2021report/. Prepared by United Nations Environment Programme, Stockholm Environment Institute, International Institute for Sustainable Development, and other research organizations and universities.

8. Angela Carter and T. Dordi (Cascade Institute, University of Waterloo) April 16, 2021: https://cascadeinstitute.org/wp-content/uploads/2021/04/Carter-Dordi-Canadas-one-eye-shut-climate-policy-1.1-April-16.pdf

9. An environmental assessment of the Bay du Nord project was completed in December 2021: see "Bay du Nord Development Project", Environmental Assessment Report, https://iaac-aeic.gc.ca/050/documents/p80154/143494E.pdf. The report was prepared by the Assessment Agency of Canada pursuant to the Canadian Environmental Assessment Act, 2012 (CEAA 2012). Under the terms of the legislation that governed the Bay du Nord project review, however, the assessment was not required to consider (and did not consider) the climate impact of the greenhouse gas emissions that will be released into the atmosphere from the crude oil that over the next three decades will be extracted from this new oil field, exported, and ultimately combusted as fuel. Given that the project is not expected to begin production until about 2028, Bay du Nord represents a significant additional source of future emissions that will burden the world for decades to come. No assessment was made whether this new production is aligned with a 1.5°C world. Notwithstanding the complete exclusion of climate impact evidence, the December 2021 assessment report concluded the project will have "no significant environmental impact". Guilbeault and Wilkinson, together with the other members of the Trudeau cabinet, made the final decision to approve the project on April 6, 2022. None of them are experts.

10. *World Energy Outlook 2019*. International Energy Agency (IEA), November 8, 2018: in this report, the IEA published the findings of its new scenario study, called the "Sustainable Development Scenario" designed to calculate how much global oil consumption would need to decline to give us 66% probability of keeping the temperature increase below 1.8°C. The scenario analysis concluded that global oil use would need to be reduced from the 2018 level of 97.7 million bpd down to 87.1 million bpd by 2030 and further decline to 66.9 million bpd by 2040 (10% by 2030 and 31 % by 2040).

11. Letter July 8, 2021, sent by twenty-one energy economists and climate scientists to the Minister of Environment and Climate Change, to the Minister of Natural Resources, and to the Chair and CEO of the Canada Energy Agency: https://www.linkedin.com/pulse/canadas-energy-regulator-should-develop-net-zero-letter-mark-winfield.

12. Kathryn Harrison, Mark Jaccard, Nicholas Rivers, and Angela Carter, "Canada's energy regulator turns a blind eye to dangerous global warming", December 14, 2021: https://www.nationalobserver.com/2021/12/14/opinion/canadas-energy-regulator-turns-blind-eye-dangerous-global-warming

13. *The oilsands in a carbon-constrained Canada*, Pembina Institute, Benjamin Israel et al, February 2020: https://www.pembina.org/reports/the-oilsands-in-a-carbon-constrained-canada-march-2020.pdf

14. *National Inventory Report*, April 15, 2021, pp. 55-56.

15. The only existing technology that can separate and remove industrial CO_2 gas and prevent it from entering the atmosphere, albeit at enormous cost, is Carbon Capture, Utilization, and Storage (CCUS). In the case of the oil sands industry, CCUS would capture CO_2 emissions from the flue gases where the fuel for the extraction process is combusted (at bitumen sites and at processing facilities where natural gas is burned to generate heat and steam) and thus prevent the gases from being released into the atmosphere. The captured CO_2 would be compressed into an almost liquid form, transported by pipeline and injected deep underground for permanent storage. At present, the only functioning CCUS installation in Alberta is the "Quest Project" located at Shell Canada's Scotford Upgrader near Edmonton. Designed to capture and inject underground 1.2 Mt of CO_2 every year, it became operational in November 2015. It captures CO_2 emitted from the upgrader's units which produce hydrogen for upgrading bitumen. The capital cost was $1.35 billion, two-thirds paid for by taxpayer subsidies from Canada and Alberta.

    A consortium of oil sands producers say they will be able to reduce their emissions by 22 Mt annually by 2030, but that number has not been supported by any detailed studies and only a portion of that cut relies on CCUS. The Federal Government has not released any analysis or data showing the magnitude of the emissions reductions that CCUS technology might achieve by 2030 in the oil and gas sector (the March 29, 2022 ERP document offers no details). Recent analysis by the Pembina Institute concludes that CCUS could achieve emissions reductions of 7 Mt -15 Mt in the oil sands sub-sector by 2030: "Getting on Track: a primer on challenges to reducing carbon emissions in Canada's oil sands: https://www.pembina.org/reports/getting-on-track.pdf ; and "Decarbonizing Canada's oil and gas supply", March 21, 2022: https://www.pembina.org/reports/decarbonizing-canadas-oil-and-gas-supply.pdf

16. *UN Emissions Gap Report 2021*, October 26, 2021: https://www.unep.org/resources/emissions-gap-report-2021

ABOUT THE AUTHORS

David Gooderham practiced law in Vancouver for thirty-five years in civil litigation. He was called to the Bar in British Columbia in 1975 and retired at the end of 2012. He attended the University of Toronto, taking an honours degree in economics and political science and an LLB from the University of Toronto Law School in 1970. For the past ten years, he has been examining the environmental review processes and various reports that the Federal Government has used to justify the ongoing expansion of Canada's oil production. With long experience in how expert evidence is used in the judicial process, and how it can be misused, Gooderham has documented the repeated failures and refusals of the government and of its energy agency, the CER, to consider the available evidence of climate science and to assess the global emissions implications of the government's plan to continue increasing Canada's oil production for another 20 years and maintain high levels of production to 2050.

His writings have included submissions to Environment Canada in June 2016 critiquing the draft report *Review of Greenhous Gas Emissions Estimates* for the TMX pipeline expansion and to the *Ministerial Panel for the Trans Mountain Pipeline* in August 2016. Most recently, in March 2022, he was invited to testify before the Parliamentary Standing Committee on Environment and Sustainable Development regarding government subsidies that will support the continued growth of Canada's oil production.

Jennifer Nathan has a Science degree in biology and a Masters of Education Degree. Early in her career, she worked for ten years as a biotechnician and interpretive naturalist in Northern British Columbia and the Yukon, and as the coordinator of a Scientists in the Schools program in the Yukon Territory. She subsequently provided professional development training to teachers on experiential science and was a teacher of high school science in B.C. She is deeply engaged in climate issues, advocating for the inclusion of climate literacy in schools and engaging with her municipal government on transportation policy issues.

Both were arrested in 2018 after peacefully disobeying an injunction relating to the construction of the Trans Mountain pipeline expansion and charged with criminal contempt. They raised the common law defence of necessity in a lengthy legal challenge that took two years to complete. Their necessity defence was ultimately dismissed by three judges of the B.C. Court of Appeal in September 2020. The appeal judges ruled unanimously that *even if climate change is now an "imminent peril" that threatens the survivability of human life* – and even assuming the evidence presented to the Court fully supports the conclusion that Canada's expanding oil production is now materially contributing to the rapidly escalating risk of a catastrophic outcome (the court explicitly declined to decide that question and refused to even consider the evidence) – nothing could excuse an act disobeying the law. The court stated that the defendants "could have chosen to do nothing".